IC 2001-1 TO AFI 91-204, SAFETY INVESTIGATIONS AND REPORTS

11 DECEMBER 2001

SUMMARY OF REVISIONS

This revision incorporates IC 02-01 and includes numerous changes. It updates the table of contents for Chapter 3 and changes the way cost figures are computed in mishaps (paragraphs 3.4, 3.6 and 3.7) to reflect guidance in DODI 6055.7.

3.4. Mishap Costs.

★3.4.1. General Guidelines. It is DoD policy to determine accurate mishap costs in order to "provide a factual basis for the allocation of resources in support of DoD accident prevention programs." The use of "standard repair costs" not based upon actual mishap damage or use of artificial labor rates for repair can cause erroneous funding decisions, and must be avoided.

★3.4.1.1. Using Costs To Classify a Mishap. Estimate the mishap dollar cost and classify the mishap using the best information available. Calculate the direct cost (per paragraph 3.4.3.1.) of a mishap by adding all costs of damaged or destroyed assets. Do not classify mishaps based on injury and/or occupational illness costs. (Severity of resulting injury and/or occupational illness, not cost, is used to classify mishaps). If the initial mishap cost estimate is within 10 percent of the next classification threshold cost, the Convening Authority should consider using the higher mishap class until estimates are firm.

★3.4.1.2. Updating cost estimates. When improved cost estimates result in an increased mishap classification, issue a status message within one day. When improved cost estimates result in a decreased mishap classification, validate the estimates and issue a status message within ten days. Use the best available estimate for the final report. Investigators must notify the Convening Authority if estimates may be subject to significant change after the final report. If costs are not firm, the Convening Authority must continue to track costs and update the estimate by message to the final message address list if costs change significantly. A significant change is any change that results in a different mishap classification or if final costs differ by more than 25 percent from the cost estimate in the final report. When items sent for depot repair are later determined to be non-repairable, revise costs to use acquisition cost or replacement cost methods.

★3.4.1.3. Joint Service Accidents. For Joint Service Accidents, classify the mishap according to severity of all injuries or all combined damage costs (excluding injury costs). Determine costs, losses and injuries for each involved service according to asset ownership and personnel assignment, and provide a breakout report showing the losses attributable to each service, as well as non-service losses and total losses.

★3.4.2. Determining Costs. Identify all reportable damage, injury, and illness resulting from a mishap. Determine whether damage is reportable per paragraph 3.4.3 and verify that all Direct Costs per paragraph 3.4.3.1 are included. Calculate damage costs for DoD property per paragraph 3.5 and for non-DoD property per paragraph 3.6. Calculate Standard Injury, Illness and Fatality Costs for DoD personnel per paragraph 3.7, but do not add these to damage costs. Multiple resources in different locations may be damaged or destroyed in a single mishap.

★3.4.2.1. (Deleted)

★3.4.2.2. (Deleted)

★3.4.3. (Added) Reportable mishap damage costs.

★3.4.3.1. (Added) Direct costs. Only direct damage costs are used to determine mishap classification levels. Direct costs include any reportable damage as a direct result of the mishap, to include actual costs of all destroyed or damaged property. Injury costs are not direct costs and are reported separately from damage costs. The direct cost of damage to property shall be computed using the actual costs of repair or replacement, including work hours to repair, or the best official estimates. Report costs even though the US Government is wholly or partially reimbursed or repairs are accomplished under warranty. The following are included as direct costs:

★3.4.3.1.1. (Added) Any damage resulting from the mishap event prior to completion of fire fighting and rescue operations, to include additional damage caused by fire fighting and rescue operations.

★3.4.3.1.2. (Added) Costs for environmental decontamination, property clean up and restoration. This applies to private property and government property.

★3.4.3.1.3. (Added) Cost for transportation of damaged property to a repair facility (other than the home station for the mishap property). For aircraft ferry flights, use the flying hour costs in AFI 65-503, Table A2-1.

★3.4.3.1.4. (Added) The cost of damage caused by jettisoned items (such as fuel or stores), but not the value of any intentionally jettisoned items listed in paragraph 3.4.3.2.

★3.4.3.1.5. (Added) For mishaps involving ground launched missiles, direct costs include the total man-hours missile maintenance personnel spend repairing the damage.

★3.4.3.2. (Added) Non-reportable damage costs. Certain damage costs are excluded from DoD reporting requirements.

★3.4.3.2.1. (Added) The cost of intentionally jettisoned items in the following list shall not be included in the cost of the mishap per DoD rules. If costs for these items can be

determined, list the cost in the report for information, but do not include it in the total damage cost. The cost of any consequential damage to any property (including damage to aircraft or environmental cleanup costs) is included as a reportable direct cost, however. The list of non-reportable intentionally jettisoned items is limited to canopies, cargo, doors, drag chutes, hatches, life rafts, auxiliary fuel tanks, missiles, drones, rockets, non-nuclear munitions, and externally carried equipment not essential to flight. This exclusion does not apply to missiles, drones, rockets, or non-nuclear munitions when their malfunction was the reason for jettison.

★3.4.3.2.2. (Added) When damage occurs to Air Force property as a result of non-government activities, such as a civilian operated private motor vehicle (PMV) crashing into Air Force property, report only Air Force property damage. Do not report any damage to the civilian PMV or injury to the occupants unless otherwise reportable according to this instruction.

★3.4.3.2.3. (Added) Do not include additional damage occurring during recovery operations; such damage is a separate mishap. For example, if a crane drops a mishap aircraft while moving it onto a trailer, it is a ground mishap in addition to the initial flight mishap.

★3.4.3.3. (Added) Indirect costs. Indirect costs include those costs resulting after a mishap, but which are not required to correct damage incurred during the mishap event. Indirect costs are not damage costs and are not used in determining mishap classification levels. If indirect costs are significant and known they should be reported in the damage costs section of the mishap report. Examples of indirect costs include:

★3.4.3.3.1. (Added) Investigation costs such as TDY funding, per diem, and transportation costs for SIB members, investigators and related support personnel.

★3.4.3.3.2. (Added) Costs for recovery of mishap aircraft, vehicles or components and transportation to a site where the mishap investigation is conducted.

★3.4.3.3.3. (Added) Costs for ISB members and mishap site support personnel, such as those needed to secure the site and render it safe.

★3.4.3.3.4. (Added) Costs for time spent inspecting, troubleshooting and setting up maintenance stands or equipment for the purpose of damage assessment. (When such costs are incurred for the purpose of planning or performing repairs, they are direct costs.)

★3.4.3.3.5. (Added) Costs associated with preparing a damage cost estimate.

★3.4.3.3.6. (Added) Costs for loss of use of equipment, or for substitute equipment when equipment related to the mishap is impounded or otherwise unavailable.

★3.5. Damage To DoD Property.

★3.5.1. General Guidelines. Damage cost estimates are intended to quantify the loss of taxpayer assets in a mishap. Determine the costs of reportable damage to all property, including equipment, facilities, and materiel resulting from Air Force mishaps. Each damaged item must be evaluated separately using the proper cost method, and the total damage costs are then added for all items to determine mishap cost. The flowchart at Figure 3.1 may be used to determine the appropriate cost method for damaged items.

★3.5.1.1. Repairs not accomplished. Costs must be developed to remedy all mishap damage regardless of whether repairs are actually accomplished. An exception is purely cosmetic damage that will not be repaired. Mishap costs are prepared without regard to disposition of the damaged property. For example, if it would cost $20,000 to repair damage to a $2 million aircraft, but a decision is made to retire the aircraft, mishap cost is the cost to repair the mishap damage, not the cost of the aircraft.

★3.5.1.2. Repairs or replacement reimbursed or under warranty. Costs to repair damage must normally be reported even if the Air Force is reimbursed or if the repair is accomplished under warranty. In such cases, determine the damage costs as if no warranty or reimbursement existed. These costs are needed to determine appropriate investment in mishap avoidance programs, and to determine whether future warranties should be purchased, etc. An exception is for warranty work performed on Commercial Off-the-Shelf components when an identical warranty for repairs is integral to the purchase price and provided to all customers for those components.

★3.5.1.3. (Deleted)

★3.5.2. Cost Methods.
There are three methods to determine the mishap cost: Use Acquisition Costs when property is damaged and will not be repaired or replaced. Use Replacement Costs when property is damaged and will be replaced with similar property. Use Repair Costs when property will be repaired by applying labor to correct the damage or to remove and replace damaged components. If an item is sent for repair and determined to be not repairable or beyond economical repair, use acquisition or replacement cost.

★3.5.2.1. Acquisition Costs. When property is damaged and will not be replaced or repaired, calculate damage as the acquisition cost plus the cost of all modifications in then-year dollars.

★3.5.2.1.1. (Added) For stock-listed equipment, use the Unit Price for the damaged item in the Air Force Master Item Identification Database (D043A) unless actual acquisition cost can be documented. Obtain the National Stock Number(s) of the specific items through the unit maintenance or job control office. For Contractor Logistic Support (CLS) maintained items, use the contractor stock number instead of a NSN. Provide the contractor stock number or NSN to the Base Supply Representative for retrieval of the unit price from D043A. If D043A does not contain unit pricing data on the item, contact the Single Manager for the system.

★3.5.2.1.2. (Added) For destroyed aircraft, see AFI 65-503, *US Air Force Cost and Planning Factors,* Table A10-1 for acquisition (fly-a-way) costs for entire aircraft. This information can be retrieved from the SAF/FMC web site (www.saffm.hq.af.mil FMC Tab, Cost Factors button) or can be obtained from the Air Force Cost Analysis Agency, DSN 664-0453 or commercial (703) 604-0453. Contact the AFMC Single Manager for the damaged system for modification costs.

★3.5.2.2. Replacement Costs. When property is damaged and will be replaced, figure damage as the Unit Price of the replacement property as listed in the Air Force Master Item Identification Database (D043A). Obtain the National Stock Number(s) of the specific items through the unit maintenance or job control office. For Contractor Logistic Support (CLS) maintained items, use the contractor stock number instead of a NSN. Provide the contractor stock number or NSN to the Base Supply Representative for retrieval of the unit price from D043A. If D043A does not contain unit pricing data on the item, contact the Single Manager for the system. Do not include the surcharge as supplied from supply channels in figuring mishap costs.

★3.5.2.3. Repair Costs. When property is damaged and will be repaired, include the cost of materials and replacement parts plus the actual cost of the direct shop-hours spent by all individuals removing, repairing and installing equipment, components and parts, as required to complete repairs. Also include time spent removing and replacing undamaged panels, components, or units to gain access to damaged items, and the cost for testing or evaluation to determine serviceability of involved components. Do not include the cost of "on opportunity" upgrades or outstanding tech order compliance items performed in conjunction with the repairs. The operational commander will decide how or where to repair hardware. If an item is sent for repair and determined to be not repairable or beyond economical repair, use acquisition or replacement cost. Calculate repair costs as follows:

★3.5.2.3.1. (Added) Labor costs. To determine labor costs, multiply direct shop-hours by the actual "shop rate" (also called Source of Repair Sales Rate or Induction Rate per Standard Hour) for the facility where the hours are expended. If work is performed at multiple facilities, use the direct shop-hours and shop rate for each facility. "Shop rates" typically include net labor rates plus facility overhead. Net labor rates include direct labor (mechanics performing work), production overhead (planners, schedulers, parts handlers), general & administrative labor (budget analysts, data systems, facility management), and indirect labor (vacation, sick leave, training, clean-up). Facility overhead includes indirect (consumable) materials, utilities, depreciation and other miscellaneous expenses. (Note: For mishaps occurring prior to 01 October 2001, an artificial figure of $16 per hour was used for all labor rates. After that date, DoD requires the use of actual labor costs.)

★3.5.2.3.2. (Added) DoD Depot-Level Repairs. For depot repair work, if all work is accomplished in a single Resource Cost Center (RCC), use that RCC shop rate for the direct shop-hours of labor. If work is performed in more than one RCC, either calculate

using appropriate hours and rates for each RCC; or add all hours together and use the shop rate for an organizational level encompassing all involved RCC or for the entire depot. Contact the Single Manager for the damaged system or the Financial Management office for the depot to obtain rates.

★3.5.2.3.3. (Added) Base-Level Repairs. For mishap damage repair accomplished at base level, use the shop rate for the Resource Cost Center (RCC) accomplishing the repair work. Rate Tables are maintained by the Financial management office for the base. Include materials and replacement parts costs.

★3.5.2.3.4. (Added) Contractor Repairs. Use the actual cost charged to the government for repairs performed by contractors. Contractor repair estimates must include costs to repair the specific mishap damage, but are not required to disclose labor hours or shop rates if such information is competition sensitive. For items repaired by a contractor under warranty, obtain and use the cost of repair as if the item was not under warranty. (See paragraph 3.5.1.2.) When a contractor repair facility uses established standard repair costs for repairing items and the facility does not have the capability to determine actual repair costs, use the established figures. For example, if a facility charges a set fee to repair an actuator regardless of the extent of damage, and cannot determine an actual repair cost for a mishap actuator, use that set fee. Include a detailed explanation from the repair facility for how the established figures are derived and why it is not possible to estimate actual costs.

★3.5.2.4. (Deleted)

★3.5.2.4.1. (Deleted)

★3.5.2.4.2. (Deleted)

★3.5.2.4.3. (Deleted)

★3.5.2.4.4. (Deleted)

★3.5.2.4.5. (Deleted)

3.5.3. Munitions Drop Criteria.
When munitions or all-up-round components are dropped a distance greater than the technical order limit, the depot may have to do serviceability tests. Estimate the cost at 15 percent of the replacement cost in the current stock catalog. If the item fails the serviceability test, correct the dollar cost to full value in a subsequent status report. If the item passes the serviceability test, do not change the report.

★3.6. Non-DoD Property Damage or Injury.

★3.6.1. When Air Force operations result in damage to non-DoD property, include those damage costs with DoD property damage costs to determine mishap classification.

★3.6.1.1. (Deleted)

★3.6.2. When Air Force operations result in injury to non-DoD personnel; use severity of injury to determine the mishap classification and reportability (fatal, permanent partial, etc.). **Note:** Do not include injury costs for non-DoD personnel in the mishap report.

★3.6.2.1. (Deleted)

★3.6.2.2. (Deleted)

★3.6.2.3. (Deleted)

★3.6.2.4. (Deleted)

★3.6.3. (Added) Determine these costs using the following priority:

★3.6.3.1. (Added) Claims officer's damage statement.

★3.6.3.2. (Added) Official estimates, such as security police reports, civil police reports, and transportation estimates.

★3.6.3.3. (Added) Safety investigator's estimate.

★3.7. Standard Injury, Illness, and Fatality Costs.
The DoD standardized cost data in Table 3.1 will be used to compute the cost of injuries and occupational illness of DoD personnel (civilian and military) involved in a mishap. Do not use this Table for non-DoD personnel. Amounts depicted are required for DoD reporting purposes and seldom have any relationship to actual costs in a specific case. In those cases when the actual lost time is not known at the time a report is submitted, the best official estimate of lost time made by a competent medical authority will be used. Report the extent of injuries, amount of lost time or days hospitalized, and/or fatality or degree of disability for each individual involved in the mishap, and calculate the Standard Injury Costs for the mishap. Report Standard Injury Cost separately from damage costs.

★3.7.1. (Deleted)

★3.7.1.1. (Deleted)

Figure 3.1. Damage Cost Methods.